Bonneville Power Administration
Fish and Wildlife Program FY 99 Proposal Form

Section 1. General administrative information

Title Enhance Squaw Creek Watershed for Anadromous Fish and Wildlife Habitat

Bonneville project number, if an ongoing project 9506001

Business name of agency, institution or organization requesting funding

Confederated Tribes of the Umatilla Indian Reservation

Business acronym (if appropriate) CTUIR

Proposal contact person or principal investigator:

Name	Carl Scheeler
Mailing Address	P.O. Box 638
City, ST Zip	Pendleton, Oregon 97801
Phone	(541) 276-5268
Fax	(541) 276-4348
E-mail address	wildlife@ucinet.com

Subcontractors.

Organization	Mailing Address	City, ST Zip	Contact
Umatilla County Weed Control	3920 Westgate	Pendleton, OR 97801	Matt Voile
Earth Conservation Corps/ Salmon Corps at Umatilla	P.O. Box 638	Pendleton, OR 97801	Modesta Minthorn
Various Fence Construction			

Contractors hired through bidding process			
Various Heavy Equipment Contractors hired through bidding process Unidentified botanical survey contractors hired through bidding process Unidentified forester contractors hired through bidding process			

NPPC Program Measure Number(s) which this project addresses.

7.6A, 7.6C, 7.7, 7.8E, 11.2, 11.3C, 11.3D

NMFS Biological Opinion Number(s) which this project addresses.

Other planning document references.

Wy Kan Ush Me Wa Kush Wit - Volume 1, Hypothesis 3, **Watershed Restoration**, Habitat: Tributary, Problem Statement, second paragraph, pages 5B-12 and 5B-13 and Hypothesis, page 5B-13.

Wy Kan Ush Me Wa Kush Wit - Volume 2, Umatilla River, Recommended Actions For The Umatilla River, **III. Watershed**

Management, page 44.

Umatilla River Drainage Anadromous Fish Habitat Improvement Implementation Plan, Fishery Characteristics - Limiting Factors, last paragraph of page 6 through page 9 and **APPENDIX B**, Riparian Habitat Inventory Summaries - by Subbasin and Stream

The Umatilla River Subbasin Salmon and Steelhead Production Plan, **Part II. HABITAT PROTECTION NEEDS**, **History and Status of Habitat**, pages 27 - 28.

Umatilla Basin Natural Production Monitoring and Evaluation Annual Progress Reports - Physical Habitat Survey Data and Biological Survey Data: 1992 - 1993, Appendixes D and E; 1993 - 1994, Appendixes D and E; 1995, Appendixes D and E; 1996 Appendixes B and D.

Confederated Tribes of the Umatilla Indian Reservation Wildlife Mitigation Plan for the John Day and McNary Dams, Columbia River Basin, Section 1.8.2.2. Squaw Creek Watershed Project, Pages 27 - 29.

Subbasin.

Umatilla River Subbasin

Short description.

Protect and enhance watershed resources for wildlife HEP Indicator Species for the McNary Pool in the Squaw Creek Watershed and increase natural production potential of existing summer steelhead and re-introduced chinook salmon and coho salmon in the Umatilla River Basin.

Section 2. Key words

Mark	Programmatic Categories	Mark	Activities	Mark	Project Types
X	Anadromous fish		Construction	X	Watershed
	Resident fish		O & M		Biodiversity/genetics
X	Wildlife		Production		Population dynamics
	Oceans/estua		Research		Ecosystems

	ries				
	Climate		Monitoring/ eval.		Flow/survival
	Other	X	Resource mgmt		Fish disease
			Planning/admin.		Supplementation
			Enforcement	X	Wildlife habitat en-
			Acquisitions		hancement/restoration

Other keywords.

habitat enhancement, habitat protection, land use impacts, restoration, Umatilla River Basin, project implementation, water quality, public scoping, education, private lands, monitoring, best management practices, coordination, riparian improvements, instream enhancements, bio-engineering, native vegetation, watershed analysis.

Section 3. Relationships to other Bonneville projects

Project #	Project title/description	Nature of relationship
		The Umatilla River Basin Anadromous Fish Habitat Enhancement Project shares personnel, vehicles and equipment with the Walla Walla Basin Habitat Enhancement Project to minimize project expense. Component parts of integrated watershed funding sources as prioritized by the Wildlife and Anadromous Caucuses at CBFWA.

Section 4. Objectives, tasks and schedules

Obj 1,2, 3	Objective	Task a,b,c	Task
1.	Implement and maintain instream and riparian and upland habitat enhancement projects in the Squaw Creek Watershed.	a.	Pre-construction preparation.
		Sub-task a.1.	Assess maintenance needs for existing project fencing.
		Sub-task a.2.	Prepare grant proposals and coordinate with other entities to develop cost-share agreements.
		Sub-task a.3	Conduct cultural/archeological surveys in proposed project areas (Section 106 compliance).
		Sub-task a.4	Complete project(s) design layout(s).
		Sub-task a.5	Solicit bids and award subcontracts.
		Sub-task a.6	Implement and maintain habitat enhancement projects.
		Sub-task a.7	Place and/or repair in-stream structures and bank stabilization structures.
		Sub-task b.1	Plant native grasses, shrubs and trees in project areas.
		Sub-task b.2	Treat noxious weeds in project areas.
2.	Collect baseline data and continue post-project monitoring to identify habitat limiting factors and to quantify short and long-term effects of habitat enhancement activities in the Squaw Creek Watershed.	a.	Conduct physical habitat surveys in proposed habitat enhancement project areas.
		b.	Establish permanent photo points and transects and continue to monitor after project

			implementation.
		c.	Sample aquatic macroinvertebrate populations.
		d.	Monitor water temperatures.
		e.	Monitor suspended sediments.
3.	Continue watershed enhancement and education processes.	a.	Conduct outreach efforts at the local community level.
4.	Conduct upland vegetation surveys to identify habitat limiting factors and to quantify short and long-term effects of habitat enhancement activities in the Squaw Creek Watershed.	a.	Solicit bids and award subcontract for plant association, noxious weed, and T/E/S plant surveys.
		b.	Solicit bids and award subcontract for a multiple resource inventory of forested wildlife habitats.
5.	Close/obliterate roads to reduce sediment delivery to streams and reduce wildlife disturbance.	a.	Purchase of signing materials for road closures.
		b.	Construct road closure devices.
6.	Consolidate lands to allow for consistent, watershed-wide application of management standards.	a.	Fee title acquisition of available lands, purchase of conservation easements, establishment of cooperative agreements.
7.	Repair and maintain grazing allotment boundary fencing to assure protection of upland vegetation and wildlife habitats.	a.	Purchase fencing materials.

Objective schedules and costs

1.	2/98	1/99	10%
2.	2/98	1/99	10%
3.	2/98	1/99	10%

4.	2/98	1/99	16%
5.	2/98	1/99	2%
6.	2/98	1/99	50%
7.	2/98	1/99	2%

Schedule constraints.

Possible constraints might include delays due to extensive landowner negotiations and a slow response time from the regulatory agencies regarding issuance of permits for proposed in-stream work.

Completion date.

N/A - on-going project

Section 5. Budget

Item	Note	FY 98
Personnel	Includes 1 month salary for GIS services and 1 month salary for cultural/archeological surveys (Section 106 compliance)	$68,360
Fringe benefits	28 percent of personnel services	$19,141
Supplies, materials, non-expendable property		$48,810
Operations & maintenance	Operations & maintenance funding includes approximately 50% of personnel, fringe benefits, supplies, materials, non-expendable property, travel, indirect costs and subcontract funds as indicated in right column.	
Capital acquisitions or improvements (e.g. land, buildings, major equip.)	Acquisition of lands, conservation easements, perpetual lease agreements, grazing leases.	$442,041.00
PIT tags	# of tags: N/A	

Travel		$5,450
Indirect costs	34 percent of personnel, fringe benefits, supplies, materials, non-expendable property and travel	$48,198
Subcontracts	Heavy equipment rental, fence construction, noxious weed control, bio-engineering treatments (Salmon Corps)	$35,000
Other	Estimated 1997 Carry-over Balance	$
TOTAL		$667,000

Outyear costs

Outyear costs	**FY1999**	**FY200**	**FY01**	**FY02**
Total budget	$200,000	$200,000	$200,000	$200,000
O&M as % of total	50%	50%	50%	50%

Section 6. Abstract

a. Funds are being sought to protect watershed resources, implement and maintain fisheries and wildlife habitat enhancement projects, monitor habitat conditions, and offer public access and education in the Squaw Creek Watershed.

b. The goal is to protect and enhance habitat for McNary Pool Wildlife HEP species and to improve natural production of anadromous fish in the Squaw Creek Watershed. Objectives include cessation of activities which adversely impact watershed resources, implementation and maintenance of habitat enhancement projects, and monitoring habitat conditions.

c. This project is consistent with NPPC Measure Numbers 7.6, 7.7 and 7.8. 11.2, 11.3, The project entails coordinated, cooperative efforts to protect and improve Mcnary pool Wildlife HEP Species habitat and anadromous fisheries habitat on a comprehensive watershed management basis. Improved habitat quality will allow greater juvenile and adult freshwater survival and result in greater offspring out-migration survival.

d. The CTUIR have undertaken a watershed scale approach in identifying land uses that are damaging to ecosystems or

detrimental to upland and riparian habitat recovery. Rather than focusing solely on in-channel modifications, the Tribes propose to utilize natural recovery to preserve and restore both riparian and upland habitats. Active management and bio-engineering approaches have been reserved for areas that will not sufficiently recover in a natural manner.

e. Short-term (three to five years) project effects include native plant recovery in both the upland and riparian zones, increased streambank stability and increased macroinvertebrate populations and diversity.

Long-term (25 to 100 years) project effects include changes in hydrological features, vegetation succession and composition, channel narrowing, increased channel shading, improved water quality, increased wood recruitment and increased habitat.

f. Monitoring includes:

- stream channel transects
- photo points
- physical surveys
- macroinvertebrate surveys
- stream temperatures
- suspended sediments
- HEP Analysis.

Results will be evaluated in annual reports submitted to BPA.

Section 7. Project description

a. Technical and/or scientific background.

The Squaw Creek Watershed project was identified through development of the Umatilla River Basin Anadromous Fish Habitat Enhancement Project, the Umatilla Drainage Fish Habitat Improvement Implementation Plan (ODFW, USFS and CTUIR, 1988), and the CTUIR's Wildlife Mitigation Plan. The Umatilla River Basin Anadromous Fish Habitat Enhancement Project was developed in 1988 to address in-stream and riparian habitat deficiencies on private lands within Umatilla Indian Reservation Boundaries. This project is partially funded under the Northwest Power Planning Council's Columbia River Basin Fish and Wildlife

Program as partial mitigation for hydroelectric dam construction and the subsequent losses of wildlife habitat and anadromous fish throughout the Columbia River Basin. The goal of this project is to enhance natural production of existing summer steelhead and re-introduced chinook and coho salmon in the Umatilla River Basin and restore and maintain wildlife habitats to benefit HEP target species of wildlife .

The Umatilla Drainage Fish Habitat Improvement Implementation Plan (ODFW, USFS and CTUIR, 1988) identified approximately 66.9 stream miles of anadromous fisheries habitat in the Umatilla River Basin requiring restoration or protection measures. All areas identified are higher quality watersheds supporting some level of anadromous fish populations at various life stages, supporting functional ecosystems, containing large continuous blocks of critical habitat and are the most cost effective drainages in which to implement habitat improvements. The Umatilla Drainage Fish Habitat Implementation Plan recommended that CTUIR implement improvements on eighteen miles of the 66.9 miles of stream habitat identified as deficient over a five year period. To date, the CTUIR have utilized BPA and BIA funds to address limiting factors in eight stream miles of the previously identified private lands. Seven miles of stream habitat was identified within the Squaw Creek Watershed.

In 1993, the project shifted emphasis to a comprehensive watershed approach and began to identify upland and riparian watershed-wide causative factors impacting wildlife and fisheries habitat and natural production capabilities throughout the Umatilla River Watershed. Scoping meetings were conducted to encourage public involvement, assist in identifying detrimental land use practices and to cooperatively develop long-term solutions to improving practices impacting fisheries habitat. Basin-wide physical surveys began to be conducted in coordination with the CTUIR Umatilla Basin Natural Production and Evaluation Project and with ODFW. GIS data base development began for past and present land use practices, ecotypes and habitat inventory data in subwatersheds of concern.

In 1994, the Nonpoint Sources of Water Pollution Assessment and Management Program Plan was completed for the Umatilla River Basin (CTUIR, 1994). This document identifies nonpoint source pollution problems in subwatersheds throughout the basin and prioritizes watershed areas for nonpoint source pollution control work. The plan has been used to assist with development of Oregon Department of Environmental Quality's **303(d) List** of water quality limited water bodies and to establish Total Maximum Daily Loads

(TMDL's) within the Umatilla Basin in accordance with the **303(d) List**. The project has relied heavily upon the plan and data obtained from the Umatilla Basin TMDL Technical Committee to assist with prioritization of additional habitat enhancement efforts in the basin.

The CTUIR Native Plant Nursery opened in 1996 and has been instrumental in providing the project with previously unavailable subbasin specific indigenous plant materials (alleviating concerns about gene pool contamination of existing plant communities).

It is critical that project efforts continue in the Squaw Creek watershed. Land use practices impacting water quality and limiting available habitat and natural fisheries production capabilities have been identified and need to be addressed.

b. Proposal objectives.

Objective 1. Implement and maintain instream and riparian habitat enhancement projects in the Squaw Creek Watershed.

Products derived from Objective 1.:

- one noxious weed control, one tree planting, one operated heavy equipment rental contracts will be developed

- Seed approximately 200 pounds of native grass seed and approximately 1000 indigenous trees and shrubs in project areas.

Objective 2. Collect baseline data and continue post-project monitoring to identify habitat limiting factors and to quantify short and long-term effects of habitat enhancement activities in the Squaw Creek Watershed.

Products derived from Objective 2.:

- Establish photo points and stream channel transects (number unknown at this time)

- Aquatic macroinvertebrate populations will be sampled in project areas and sent to the

USFS Aquatic Ecosystem Analysis Lab for identification and analysis; a report of the lab's findings will be produced

- Thermographs will be deployed in the basin during warm summer months; stream temperature data will be compiled in tabular form; maximum, minimum and average stream temperatures will be graphed and included in the BPA Annual Report

- Suspended sediments will be monitored from the stream gauge station and data will be graphed and included in the BPA Annual Report.

Objective 3. **Continue watershed enhancement and education processes by identifying problems and developing creative solutions to land use problems impacting fisheries habitat in the Umatilla River Basin.**

Products derived from Objective 3.:

- Public scoping meetings will be provided

- CTUIR will provide project information to the public at various workshops, sportsman shows, etc. (number unknown at this time)

- Public education materials - photo displays, pamphlets, etc. will continue to be produced as needed.

Objective 4. **Conduct upland vegetation surveys to identify habitat limiting factors and to quantify short and long-term effects of habitat enhancement activities in the Squaw Creek Watershed**.

Products derived from Objective 4:

- One timber stand exam and one botanical survey contract.

- collection of dead and down tree habitat and late-old structure timber stand data. Plant association maps, noxious weed location maps, delineation of suitable and potential T/E/S plant habitats. Data will be used for HEP and vegetation enhancement project monitoring.

- Objective 5. **Close/obliterate roads to reduce sediment delivery to streams and reduce wildlife disturbance.**

  Products derived from Objective 5:

  - One heavy equipment operating contract.

  - Closure of 5 - 10 road miles and control of access through signing, reductions in resource damage, erosion, and sediment delivery to streams.

Objective 6. **Consolidate lands to allow for consistent, watershed-wide application of management standards**.

Products derived from Objective 6:

- Larger land base which will allow for greater control of management standards.

- Additional Habitat Units for McNary Pool HEP species.

Objective 7. **Repair and maintain grazing allotment boundary.**

Products derived from Objective 7:

- Repair of approximately 8 miles of fencing,

livestock exclusion and increased protection of upland and riparian plant communities, increases in Habitat Suitability for the McNary pool HEP species (meadowlark).

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c. Rationale and significance to Regional Programs.

The project is consistent with the Northwest Power Planning Council's Columbia River Basin Fish and Wildlife Program. This habitat project is one element in the comprehensive Umatilla Program, which also includes artificial production, adult and juvenile passage improvements (ladders, screens, and trap and haul), instream flow enhancement, and monitoring and evaluation.

Habitat enhancements implemented under this project will continue to result in the following benefits: 1) increased water table saturation zones and instream flow levels during summer months, 2) slower water velocities and narrower stream channels, 3) more diverse native riparian vegetation communities to assist with bank stabilization, provide recruitable wood for instream cover, increase shading, increase insect drop and filter sediments. These combined benefits will aide anadromous salmonids by improving overall water quality, increasing and diversifying fisheries habitat and increasing potential food sources (macroinvertebrates).

Emphasis on watershed-wide habitat is needed for protection and enhancement of upland wildlife habitats and natural production capabilities in the basin. The project represents a continuation of existing efforts to mitigate for McNary pool HEP species and to improve natural production in the Umatilla River Basin. The project will continue to provide critical elements to a comprehensive watershed management approach to help guide implementing agencies and the Tribes in promoting watershed projects, anadromous fish rebuilding plans, and recommend necessary changes to management systems. The project will provide an integrated and comprehensive information base. The project will continue to complement ongoing wildlife mitigation efforts and fish passage and artificial production programs already in place in the basin and will integrate existing on-the-ground management systems and programs on private and public lands with restoration activities to better justify expenditure of funds and time. Coordination will continue between Tribal, local, state and federal agencies and the agricultural community.

d. Project history

The Project was prioritized for protection and enhancement under the Umatilla River Basin Anadromous Fish Habitat Enhancement Project, 87-100-01 with an emphasis on its natural production potential for anadromous and resident fish. In 1991 a cultural resources survey of fourteen spring sites was conducted as a precursor to spring development and protection efforts. Additionally, fish habitat surveys were conducted and baseline water quality data collected under this project.

Physical and biological surveys (Juvenile abundance/distribution, pre-spawning surveys and redd counts) were conducted under the Umatilla Basin Natural Production Research Project to document natural production success and related habitat conditions in the sub-watershed.

The CTUIR implemented a big game forage enhancement project in cooperation with private landowners, the Oregon Department of Fish and Wildlife, and the Rocky Mountain Elk Foundation in the Fall of 1995 to improve big game forage conditions in the Squaw Creek area. The project included aerial application of fertilizer and distribution of salt to improve elk distribution. In severe winters, the Umatilla Indian Reservation winters several thousand elk from surrounding big game units in the Blue Mountains which trigger depredation complaints from private landowners on reservation. The Squaw Creek fertilization and salting project is the first of several planned for implementation in the Blue Mountain foothills.

The CTUIR Wildlife Program is currently in the process of facilitating the development of multi-agency plan to improve and promote the condition and distribution of native plant communities and cover/forage conditions for big game and other wildlife. Additional management activities in adjacent drainages on National Forest system lands include salvage timber harvest, prescribed underburning, and implementation of access and travel management plans.

A wildlife mitigation project in the Squaw Creek corridor would be one component of a broader effort by the CTUIR, Forest Service, private landowners, and other organizations regarding development and implementation of projects to improve natural ecosystems in the Blue Mountains. The goal for this project area would be to promote stewardship and watershed restoration efforts through purchase of easements on range units administered by the Bureau of Indian Affairs, acquisition of fee title on available lands, and development of cooperative efforts between the Tribes, federal and state agencies, and private landowners.

> Approximately 5800 acres of private lands were purchased from the primary land owner in the watershed in November of 1997 using a combination of Anadromous and Wildlife funds from BPA. These lands provide the nucleus of the restoration effort. Addtionally, the

CTUIR donated all of their holdings in the watershed to the project purposes.

e. Methods.

1. (1) Lease agreements, conservation easements and acquisitions proposals are developed in-house by CTUIR Fisheries and Wildlife Staff and Tribal Attorneys.

(2) Cost-share funds are generally secured by CTUIR completing grants applications (USFWS, GWEB, etc.)

(3) CTUIR's Cultural Resource staff conduct file and literature searches, pedestrian surveys and/or archeological excavations in proposed habitat enhancement areas to determine if cultural resources potentially eligible for inclusion to the National Register of Historic Places are present on the site. Final reports documenting their findings are prepared and submitted to the BIA Umatilla Agency Real Property Management Office (for implementation efforts on the Reservation) and to the State Historic Preservation Office (for implementation efforts, both on and off the Reservation.) All cultural clearances are obtained in compliance with Section 106 of the National Historic Preservation Act.

(4) Letters are mailed to perspective contractors, and they are encouraged to participate in pre-bid tours and submit bids. Notices to proceed are issued to the selected contractor (s).

(5) Five-stranded smooth-wire high tensile fence or barbed wire fence is constructed to CTUIR's specifications.

(6) Native grass mixes have been developed by Grassland West Seed Company based on historical vegetation, soil types and project elevation. Grasses are seeded with a harrow or broadcast seeder. Indigenous trees and shrubs are planted as cuttings or bareroot stock. Bareroot trees are subbasin specific trees produced from seed or cuttings at the CTUIR Native Plant Nursery. Native grass re-establishment has been 50% or greater. Tree mortality has dropped dramatically with the Tribal nursery's trees. Success is nearly 75%.

(7) Noxious weeds in project areas are chemically

treated three times a year by Umatilla County Weed Control. Only level one noxious weeds on the Umatilla County Noxious Weed List are treated. Non-noxious untreated weeds in the Wildhorse Creek Project Area (approximately two stream miles) are currently competing with native revegetation efforts. CTUIR Project Personnel intend to burn and seed these areas with native grasses during winter 1998.

2. (1) Photo points are taken with a 35 mm camera and a standard 50 mm lens. Photos are taken facing upstream in the spring and fall of each spring and fall of each year. A photo point binder containing 35 mm slides is maintained at the CTUIR Wildlife Office

(2) Aquatic macroinvertebrates are sampled in early summer and early fall of each year. Sampling methodology developed by the U.S. Forest Service - Intermountain Region Wildlife Management is utilized to sample macroinvertebrates. Methods are described in detail in Chapter 5 of the Fisheries Habitat Surveys Handbook (publication #R-4 F5H 2609.23. Macroinvertebrate samples and field support data are sent to Dr. Fred Magnum at the U.S. Forest Service Aquatic Ecosystem Lab in Provo, Utah for identification and analysis. Surveys have only been conducted for the past two years, but information obtained to date has been useful in assisting with determination of water quality and habitat conditions.

(3) Summer stream temperatures are monitored with Ryan Tempmentors and Ryan 2000 thermographs. Thermographs collect maximum, minimum and average temperature readings each hours.

(4) Isco Model 2700 Wastewater samplers are deployed at gage stations to obtain estimates of suspended sediments. Samples are collected year-round at six hour intervals to create a composite daily sample. The samples are processed monthly by Umatilla National Forest Service personnel to determine Jackson turbidity units, conductivity and total dissolved solids.

3. (1) Letters are mailed to landowners in subbasins of interest (names and addresses obtained from county tax lot records) inviting them to participate in public scoping meetings. Landowner

concerns and recommendations are compiled and mailed to them in newsletters. Landowner input is taken into account when developing projects. Resource agencies, interest groups, etc. are also invited and provide additional input at meetings.

(2) CTUIR provides watershed/habitat slide shows, tours, etc. to students, sportsman groups and others.

(3) CTUIR continues to develop watershed restoration/habitat enhancement photo displays for public viewing and reproduce handouts and pamphlets for public distribution.

4. (1) Letters are mailed to perspective contractors, and they are encouraged to participate in pre-bid tours and submit bids. Notices to proceed are issued to the selected contractor (s).

5. Letters are mailed to perspective contractors, and they are encouraged to participate in pre-bid tours and submit bids. Notices to proceed are issued to the selected contractor (s).

6. (1) Lease agreements, conservation easements and acquisitions proposals are developed in-house by CTUIR Fisheries and Wildlife Staff and Tribal Attorneys.

7. (5) Five-stranded smooth-wire high tensile fence or barbed wire fence is constructed to CTUIR's specifications.

f. Facilities and equipment.

Specialized equipment required to implement specific habitat enhancements are specified under construction contract agreements with subcontractors. Project leaders possess desk-top computes and appropriate software (Microsoft Office, ArcView) to perform duties associated with this statement of work.

g. References.

Section 8. Relationships to other projects

The restoration of fisheries resources in the Umatilla Basin has been a coordinated effort between Tribal, local, state and federal agencies and the agricultural community. CTUIR's cooperators include Umatilla County, ODFW, NRCS, USFWS, and the Umatilla Basin Watershed Council and numerous private landowners. Examples of project cooperation include the Umatilla Basin Project, the Umatilla River Subbasin Salmon and Steelhead Production Plan, and the Umatilla Basin Anadromous Fish Habitat Enhancement Project and the Umatilla Hatchery and associated artificial production plans. This coordination has continued and expanded through public scoping meetings formed to identify issues and develop creative solutions to land use problems in the basin. CTUIR intends to continue these coordination efforts in implementation of the Squaw Creek Watershed Project.

Opportunities for cooperation through cost sharing has also been emphasized in the Umatilla Basin. Entities providing funding for stream/watershed habitat enhancement include BPA, CTUIR, UPRR, EPA, and USFWS.

Close cooperation is maintained between various entities (CTUIR, ODFW, County, NRCS) implementing habitat protection and enhancement actions to facilitate sharing of equipment, techniques, success and failures. Project implementors also collaborate with DSL, US Army COE, and Tribal fill and removal permitting processes in order to accomplish work.

The following are CTUIR or CTUIR Collaborative planning documents that are also related to Squaw Creek Watershed Project Mitigation efforts:

CTUIR. 1994. Non-point Sources of Water Pollution Assessment and Management Plan. EPA Region 10 Publication, Seattle, WA. page 37.

ODFW, USDA Forest Service, CTUIR. 1988. Umatilla Drainage Fish Habitat Improvement Implementation Plan. page 32.

Section 9. Key personnel

Type here (provide answers in paragraph form)
Name: Gary A. James
Title: Fisheries Program Manager

Months funded this project: 1
Education: BS Fisheries 1979 Oregon State University
Experience: 20 years fisheries experience; last 15 years CTUIR Program Manager; expertise in multi-project development, coordination, and oversight.

Name: Todd Shaw
Title: Fisheries Habitat Biologist
Months funded this project: 5
Education: BS Fisheries & Wildlife Management 1988 Lake Superior State University; A.A.S. Recreation & Wildlife Management 1983, Hocking Tech. College.
Experience: 10 years - 6.5 years Habitat Biologist

Name: Ken Hall
Title: Fisheries Technician
Months funded this project: 5
Education: High School Diploma
Experience: 10.5 years of habitat protection and restoration work; experience in coordinating and implementing on-ground projects pertaining to riparian protection.

Name: Carl A. Scheeler
Title: Wildlife Program Manager
Months funded this project: .5
Education: BS Wildlife 1985 Oregon State University
Experience: 13 years fisheries and wildlife experience; last 10 years CTUIR Wildlife Program Manager; expertise in multi-project development, coordination, and oversight.

Name: Eric Quaempts
Title: Wildlife Biologist
Months funded this project: 5
Education: BS Wildlife Science 1990 Oregon State University
Experience: 10 years - 8 years as Co-operative Education and Biologist with USFS, 2.5 years as project manager for the BPA/CTUIR's Wanaket Wildlife Mitigation Project.

Name: Randy Alexander
Title: Wildlife Technician
Months funded this project: 5
Education: High School Diploma
Experience: 6 years of USFS experience in fish habitat protection and restoration, experience in coordinating and implementing on-ground projects, contract inspection and riparian protection. Three years experience as a wildlife technician for the CTUIR.

Section 10. Information/technology transfer

Project reports of accomplishments are produced quarterly and annually. Project personnel sponsor field tours at any time requested to show accomplishments, challenges and techniques. Project personnel also frequently participate in local public forums (workshops, classrooms, multi-agency review of removal/fill permits throughout the Umatilla Basin).